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SEQUENCE LISTING

<110> The United States of America as Represented by the Secretary of the Department of Health and Human Services, Centers for Disease Control and Prevention

Liu, Hsi
Steiner, Bret
Berta, Rodes

<120> COMPOSITIONS AND METHODS FOR DETECTING TREPONEMA PALLIDUM

<130> 6395-61666

<150> PCT/US00/16425

<151> 2000-06-14

<150> US 60/138,981

<151> 1999-06-14

<160> 26

<170> PatentIn version 3.1

<210> 1

<211> 2945

<212> DNA

<213> Treponema pallidum

<220>

<221> CDS

<222> (919)..(2217)

<223>

<220>

<221> misc_feature

<223> Subspecies: pallidum (Nichols strain)

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tccccatctt ccgatactgg atcgggtgtcg gggggagtag gagtggggaa gcgtctgtgc 180

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ggtgtcaaag gaagatctta	cctggtagg gtgaacactg	cgttcttagt gctttgtgtt	840
gcttctgtca cgccgcgg	ggctgtgtgg gaaggaaatg	cagaaattgg ccccccaggga	900
agtttctgc aggacggc	atg ttt gtg cgc agt gac	atg ttc ccc aaa aac	951
	Met Phe Val Arg Ser Asp	Met Phe Pro Lys Asn	
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Thr Ala Val Glu Ile Ser	Asn Leu Glu Lys Asn	Ala Lys Ala Gln Ala	
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gtg gtt att ggg cac gca	ggg atc ccc ggt ctt cta	gtt agc ctt gca	1047
Val Val Ile Gly His Ala	Gly Ile Pro Gly Leu	Leu Val Ser Leu Ala	
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ccc gct gct gca gca	cag ctt ggg att ggc	gta tac caa gct gtg cgt	1095
Pro Ala Ala Ala Gln	Leu Gly Ile Gly Val	Tyr Gln Ala Val Arg	
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gta cgc gta cgt acc ttg	ggt acc gtc cgc ggt	ggg tct caa aca agt	1143
Val Arg Val Arg Thr	Leu Gly Thr Val Arg	Gly Ser Gln Thr Ser	
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cag gac gga ctg tcc	ctt gca tct ttg	ccg tcc cgt gtg cct	1191
Gln Asp Gly Leu Ser	Ala Ser Leu Pro Ser	Arg Val Pro Ala Arg	
80	85	90	
ccc gcg cag cgt gat	cct ctg tca tcc	ccg gca ggt cac act gta	1239
Pro Ala Gln Arg Asp	Pro Leu Ser Ser Pro	Pro Ala Gly His Thr Val	
95	100	105	
ccg gaa tat cgc gat	acg gtt att ttc	gat gac ccg cgt ttg	1287
Pro Glu Tyr Arg Asp	Thr Val Ile Phe	Asp Asp Pro Arg Leu	
110	115	120	
cct ttg tct cgt gag	gtg gag gac gcg	ccg aag gta gtg gag ccg	1335
Pro Leu Ser Arg Glu	Val Glu Asp Ala Pro	Lys Val Val Glu Pro Ala	
125	130	135	
tct gag cgt gag gga	ggg gag cgt gag	gtg gag gac gcg ccg	1383
Ser Glu Arg Glu Gly	Gly Glu Arg Glu Val	Glu Asp Ala Pro Lys Val	
140	145	150	155
gtg gag ccg gcc tct	gag cgt gag gga	ggg gag cgt gag gtg	1431
Val Glu Pro Ala Ser	Glu Arg Glu Gly	Glu Arg Glu Val Glu Asp	
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gtg ccg aag gta	gtg gag ccg gcc	tct gag cgt gag gga	1479
Val Pro Lys Val Val	Glu Pro Ala Ser	Glu Arg Glu Gly Glu Arg	
175	180	185	
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Glu Val Glu Asp Ala	Pro Lys Val Val	Glu Pro Ala Ser Glu Arg Glu	
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Gly Gly Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala	
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tct gag cgt gag gga ggg gag cgt gag gtg gag aac gtg ccg aag gta	1623
Ser Glu Arg Glu Gly Glu Arg Glu Val Glu Asn Val Pro Lys Val	
220 225 230 235	
gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac	1671
Val Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu Val Glu Asp	
240 245 250	
gcg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt	1719
Ala Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg	
255 260 265	
gag gtg gag gac gcg ccg aag gta gtg gag ccg gcc tct gag cgt gag	1767
Glu Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu	
270 275 280	
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285 290 295	
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Ser Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val	
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Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg	
335 340 345	
gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag	2007
Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu	
350 355 360	
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365 370 375	
tct ggg cat gaa gga ggg gag cgt gag gtg gag gac gtg ccg ggg gta	2103
Ser Gly His Glu Gly Glu Arg Glu Val Glu Asp Val Pro Gly Val	
380 385 390 395	
gtg gag ccg gcc tct ggg cat gaa gga ggg gag cgt gag gtc gct tct	2151
Val Glu Pro Ala Ser Gly His Glu Gly Glu Arg Glu Val Ala Ser	
400 405 410	
cag cat acg aag cag cca tcc cac tcg gtt tcc aac tca gct ccc aat	2199
Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser Ala Pro Asn	
415 420 425	
cag ttt cgg aaa ccc tga gggggactc cccttacgc tccctgacct	2247
Gln Phe Arg Lys Pro	
430	
atccgagtca gaaattgtgg ttccggagga acagaaagga cgtgcgcata cccaggtat	2307

acccgaggg	gcccacgtg	gactgcaacc	tggtaatac	tacgtacaga	ttgcagtctt	2367
tcatgacgct	atccaggtgc	agagcattgt	ccaccgtac	ggggtagaaat	accccatcgc	2427
agtggagcag	gacatccatg	aaggtaaggt	gcgttacc	gtatcgctcg	gtcctgtcca	2487
aaaagacgaa	cgcggcgccg	tactagagaa	cttccaaagg	tttggattca	aggacgcctt	2547
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cccccaagg	gggcgcacag	agcccgaagg	aacggaaggg	aaggggcaga	cttaactatt	2667
tctttgtttt	tttgagcacg	taaaacggcg	ccatctcctt	tgaaggctt	cctgcgcccgg	2727
gagcgcccat	gtagcgaacg	gagttactgt	ctatcagctc	gtacagctct	ttctcgtgcg	2787
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tccacgtacc	gcgatacgt	agaggagaag	gtgccgactt	cttctcaagg	gcaagctcta	2907
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 <213> *Treponema pallidum*

<220>
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 <223> Subspecies: pallidum (Nichols strain)

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Ala	Gly	Ile	Pro	Gly	Leu	Leu	Val	Ser	Leu	Ala	Pro	Ala	Ala	Ala	Ala
								35		40				45	

Gln	Leu	Gly	Ile	Gly	Val	Tyr	Gln	Ala	Val	Arg	Val	Arg	Val	Arg	Thr
						50		55		60					

Leu	Gly	Thr	Val	Arg	Gly	Gly	Ser	Gln	Thr	Ser	Gln	Asp	Gly	Leu	Ser
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Leu	Ala	Ser	Leu	Pro	Ser	Arg	Val	Pro	Ala	Arg	Pro	Ala	Gln	Arg	Asp
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Pro	Leu	Ser	Ser	Pro	Pro	Ala	Gly	His	Thr	Val	Pro	Glu	Tyr	Arg	Asp
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Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu
 115 120 125

Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly
 130 135 140

Gly Glu Arg Glu Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala Ser
 145 150 155 160

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val
 165 170 175

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala
 180 185 190

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu
 195 200 205

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly
 210 215 220

Gly Glu Arg Glu Val Glu Asn Val Pro Lys Val Val Glu Pro Ala Ser
 225 230 235 240

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala Pro Lys Val Val
 245 250 255

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala
 260 265 270

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu
 275 280 285

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly
 290 295 300

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser
 305 310 315 320

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val
 325 330 335

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val
 340 345 350

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu
 355 360 365

Val Glu Asp Val Pro Gly Val Val Glu Pro Ala Ser Gly His Glu Gly
 370 375 380

Gly Glu Arg Glu Val Glu Asp Val Pro Gly Val Val Glu Pro Ala Ser
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Gly His Glu Gly Glu Arg Glu Val Ala Ser Gln His Thr Lys Gln
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Pro Ser His Ser Val Ser Asn Ser Ala Pro Asn Gln Phe Arg Lys Pro
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 <213> Treponema pallidum

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 <223> Subspecies: pertenue (CDC-2 strain)

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agc aac tta gaa aag aat gcc aag gct cag gca gtg gtt att ggg cac 96
 Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His
 20 25 30

gca ggg atc ccc ggt ctt cta gtt agc ctt gca ccc gct gct gca gca 144
 Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala
 35 40 45

cag ctt ggg att ggc gta tac caa gct gtg cgt gta cgc gta cgt acc 192
 Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr
 50 55 60

ttg ggt acc gtg cgc ggt ggg tct caa aca agt cag gac gga ctg tcc 240
 Leu Gly Thr Val Arg Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser
 65 70 75 80

ctt gca tct ttg ccg tcc cgt gtg cct gcg cgc ccc gcg cag cgt gat 288
 Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp
 85 90 95

cct ctg tca tcc ccg ccg gca ggt cac, act gta ccg gaa tat cgc gat	336
Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp	
100 105 110	
acg gtt att ttc gat gac ccg cgt ttg gtt tcc cct ttg tct cgt gag	384
Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu	
115 120 125	
gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga	432
Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly	
130 135 140	
ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct	480
Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser	
145 150 155 160	
gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg	528
Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val	
165 170 175	
gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg	576
Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val	
180 185 190	
ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag	624
Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu	
195 200 205	
gtc gct tct cag cat acg aag cag cca tcc cac tcg gtt tcc aac tca	672
Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser	
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Ala Pro Asn Gln Phe Arg Lys Pro	
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<213> *Treponema pallidum*

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<223> Subspecies: pertenue (CDC-2 strain)
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Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr
 50 55 60

Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser
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Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp
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Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp
 100 105 110

Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu
 115 120 125

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly
 130 135 140

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser
 145 150 155 160

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val
 165 170 175

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val
 180 185 190

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu
 195 200 205

Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser
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Ala Pro Asn Gln Phe Arg Lys Pro
 225 230

<210> 5
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 <213> Treponema pallidum

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 <222> (1)..(939)
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<223> Subspecies: endemicum (Bosnia strain)

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Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His			
20 25 30			
gca ggg atc ccc ggt ctt cta gtt agc ctt gca ccc gct gct gca gca	144		
Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala			
35 40 45			
cag ctt ggg att ggc gta tac caa gct gtg cgt gta cgc gta cgt acc	192		
Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr			
50 55 60			
ttg ggt acc gtg cgc ggt ggg tct caa aca agt cag gac gga ctg tcc	240		
Leu Gly Thr Val Arg Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser			
65 70 75 80			
ctt gca tct ttg ccg tcc cgt gtg cct gcg cgc ccc gcg cag cgt gat	288		
Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp			
85 90 95			
cct ctg tca tcc ccg ccg gca ggt cac act gta ccg gaa tat cgc gat	336		
Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp			
100 105 110			
acg gtt att ttc gat gac ccg cgt ttg gtt tcc cct ttg tct cgt gag	384		
Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu			
115 120 125			
gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga	432		
Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly			
130 135 140			
ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct	480		
Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser			
145 150 155 160			
gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg	528		
Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val			
165 170 175			
gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg	576		
Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val			
180 185 190			
ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag	624		
Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu			
195 200 205			
gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga	672		
Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly			
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ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct	720		

Gly	Glu	Arg	Glu	Val	Glu	Asp	Val	Pro	Lys	Val	Val	Glu	Pro	Ala	Ser	
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Glu	Arg	Gly	Gly	Glu	Arg	Glu	Val	Glu	Asp	Val	Pro	Lys	Val	Val		
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gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg															816	
Glu	Pro	Ala	Ser	Glu	Arg	Glu	Gly	Glu	Arg	Glu	Val	Glu	Asp	Val		
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Pro	Lys	Val	Val	Glu	Pro	Ala	Ser	Glu	Arg	Glu	Gly	Gly	Glu	Arg	Glu	
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gtc gct tct cag cat acg aag cag cca tcc cac tcg gtt tcc aac tca															912	
Val	Ala	Ser	Gln	His	Thr	Lys	Gln	Pro	Ser	His	Ser	Val	Ser	Asn	Ser	
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Ala	Pro	Asn	Gln	Phe	Arg	Lys	Pro									
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Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala																
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Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr																
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Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser																
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Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp																
					85			90				95				
Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp																
					100			105				110				

Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu
115 120 125

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly
130 135 140

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser
145 150 155 160

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val
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Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val
180 185 190

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu
195 200 205

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly
210 215 220

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser
225 230 235 240

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val
245 250 255

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val
260 265 270

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu
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Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser
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Ala Pro Asn Gln Phe Arg Lys Pro
305 310

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Pro Ala Ser

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Arg Glu Gly Gly
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Val Glu Asp Ala
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15

Ala Ala Gln Leu Gly Ile Gly Val Tyr
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Gly His Thr Val Pro Glu Tyr Arg Asp
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Asp Val Pro Lys Val
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Ser Gln His Thr Lys Gln Pro Ser His Ser
 20 25

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Gly Gly Glu Arg
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<210> 16
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<212> PRT
<213> Treponema pallidum

<400> 16

Glu Val Glu Asn Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu
1 5 10 15

Gly Gly Glu Arg
20

<210> 17
<211> 20
<212> PRT
<213> Treponema pallidum

<400> 17

Glu Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu
1 5 10 15

Gly Gly Glu Arg
20

<210> 18
<211> 20
<212> PRT
<213> Treponema pallidum

<400> 18

Glu Val Glu Asp Val Pro Gly Val Val Glu Pro Ala Ser Gly His Glu
1 5 10 15

Gly Gly Glu Arg
20

<210> 19
<211> 1647
<212> DNA
<213> Treponema pallidum

<220>
<221> CDS
<222> (1)..(1647)
<223>

<220>
 <221> misc_feature
 <223> Subspecies: pallidum (Nichols strain)

<400> 19
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 Met Phe Val Arg Ser Asp Met Phe Pro Lys Asn Thr Ala Val Glu Ile
 1 5 10 15

 agc aac tta gaa aag aat gcc aag gct cag gca gtg gtt att ggg cac 96
 Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His
 20 25 30

 gca ggg atc ccc ggt ctt cta gtt agc ctt gca ccc gct gct gca gca 144
 Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala
 35 40 45

 cag ctt ggg att ggc gta tac caa gct gtg cgt gta cgc gta cgt acc 192
 Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr
 50 55 60

 ttg ggt acc gtg cgc ggt ggg tct caa aca agt cag gac gga ctg tcc 240
 Leu Gly Thr Val Arg Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser
 65 70 75 80

 ctt gca tct ttg ccg tcc cgt gtg cct gcg cgc ccc gcg cag cgt gat 288
 Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp
 85 90 95

 cct ctg tca tcc ccg ccg gca ggt cac act gta ccg gaa tat cgc gat 336
 Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp
 100 105 110

 acg gtt att ttc gat gac ccg cgt ttg gtt tcc cct ttg tct cgt gag 384
 Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu
 115 120 125

 gtg gag gac gcg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga 432
 Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly
 130 135 140

 ggg gag cgt gag gtg gag gac ccg aag gta gtg gag ccg gcc tct 480
 Gly Glu Arg Glu Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala Ser
 145 150 155 160

 gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg 528
 Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val
 165 170 175

 gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gcg 576
 Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Ala
 180 185 190

 ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag 624
 Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu
 195 200 205

 gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga 672
 Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly

210	215	220	
ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser			720
225 230 235 240			
gag cgt gag gga ggg gag cgt gag gtg gag gac gcg ccg aag gta gtg Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala Pro Lys Val Val			768
245 250 255			
gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gcg Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala			816
260 265 270			
ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu			864
275 280 285			
gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly			912
290 295 300			
ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser			960
305 310 315 320			
gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val			1008
325 330 335			
gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val			1056
340 345 350			
ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu			1104
355 360 365			
gtg gag gac gtg ccg ggg gta gtg gag ccg gcc tct ggg cat gaa gga Val Glu Asp Val Pro Gly Val Val Glu Pro Ala Ser Gly His Glu Gly			1152
370 375 380			
ggg gag cgt gag ^{gt} gtg gag gac gtg ccg ggg gta gtg gag ccg gcc tct Gly Glu Arg Glu Val Glu Asp Val Pro Gly Val Val Glu Pro Ala Ser			1200
385 390 395 400			
ggg cat gaa gga ggg gag cgt gag gtc gct tct cag cat acg aag cag Gly His Glu Gly Glu Arg Glu Val Ala Ser Gln His Thr Lys Gln			1248
405 410 415			
cca tcc cac tcg gtt tcc aac tca gct ccc aat cag ttt cgg aac cct Pro Ser His Ser Val Ser Asn Ser Ala Pro Asn Gln Phe Arg Asn Pro			1296
420 425 430			
gag ggg gaa ctc ccc ttt acg ctc cct gac cta tcc gag tca gaa att Glu Gly Glu Leu Pro Phe Thr Leu Pro Asp Leu Ser Glu Ser Glu Ile			1344
435 440 445			
gtg gtt ccg gag gaa cag aaa gga cgt gcg cat ccc cag gtg ata ccc Val Val Pro Glu Glu Gln Lys Gly Arg Ala His Pro Gln Val Ile Pro			1392
450 455 460			

gag ggt gcg cca cgt gga ctg caa cct ggt gaa tac tac gta cag att	1440
Glu Gly Ala Pro Arg Gly Leu Gln Pro Gly Glu Tyr Tyr Val Gln Ile	
465 470 475 480	
gca gtc ttt cat gac gct atc cag gtg cag agc att gtc cac cgt tac	1488
Ala Val Phe His Asp Ala Ile Gln Val Gln Ser Ile Val His Arg Tyr	
485 490 495	
ggg gta gaa tac ccc atc gca gtg gag cag gac atc cat gaa ggt aag	1536
Gly Val Glu Tyr Pro Ile Ala Val Glu Gln Asp Ile His Glu Gly Lys	
500 505 510	
gtg cgt ttc acc gta tgc gtc ggt cct gtc caa aaa gac gaa cgc ggc	1584
Val Arg Phe Thr Val Cys Val Gly Pro Val Gln Lys Asp Glu Arg Gly	
515 520 525	
gcg gta cta gag aac ttc caa agg ttt gga ttc aag gac gcc ttt ctg	1632
Ala Val Leu Glu Asn Phe Gln Arg Phe Gly Phe Lys Asp Ala Phe Leu	
530 535 540	
aaa aag gcg cga tga	1647
Lys Lys Ala Arg	
545	
<210> 20	
<211> 548	
<212> PRT	
<213> Treponema pallidum	
<220>	
<221> misc_feature	
<223> Subspecies: pallidum (Nichols strain)	
<400> 20	
Met Phe Val Arg Ser Asp Met Phe Pro Lys Asn Thr Ala Val Glu Ile	
1 5 10 15	
Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His	
20 25 30	
Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala	
35 40 45	
Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr	
50 55 60	
Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser	
65 70 75 80	
Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp	
85 90 95	

Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp
 100 105 110

Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu
 115 120 125

Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly
 130 135 140

Gly Glu Arg Glu Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala Ser
 145 150 155 160

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val
 165 170 175

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala
 180 185 190

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu
 195 200 205

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly
 210 215 220

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser
 225 230 235 240

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala Pro Lys Val Val
 245 250 255

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala
 260 265 270

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu
 275 280 285

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly
 290 295 300

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser
 305 310 315 320

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val
 325 330 335

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val

340

345

350

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu
 355 360 365

Val Glu Asp Val Pro Gly Val Val Glu Pro Ala Ser Gly His Glu Gly
 370 375 380

Gly Glu Arg Glu Val Glu Asp Val Pro Gly Val Val Glu Pro Ala Ser
 385 390 395 400

Gly His Glu Gly Glu Arg Glu Val Ala Ser Gln His Thr Lys Gln
 405 410 415

Pro Ser His Ser Val Ser Asn Ser Ala Pro Asn Gln Phe Arg Asn Pro
 420 425 430

Glu Gly Glu Leu Pro Phe Thr Leu Pro Asp Leu Ser Glu Ser Glu Ile
 435 440 445

Val Val Pro Glu Glu Gln Lys Gly Arg Ala His Pro Gln Val Ile Pro
 450 455 460

Glu Gly Ala Pro Arg Gly Leu Gln Pro Gly Glu Tyr Tyr Val Gln Ile
 465 470 475 480

Ala Val Phe His Asp Ala Ile Gln Val Gln Ser Ile Val His Arg Tyr
 485 490 495

Gly Val Glu Tyr Pro Ile Ala Val Glu Gln Asp Ile His Glu Gly Lys
 500 505 510

Val Arg Phe Thr Val Cys Val Gly Pro Val Gln Lys Asp Glu Arg Gly
 515 520 525

Ala Val Leu Glu Asn Phe Gln Arg Phe Gly Phe Lys Asp Ala Phe Leu
 530 535 540

Lys Lys Ala Arg
 545

<210> 21
 <211> 1047
 <212> DNA
 <213> *Treponema pallidum*

<220>

<221> CDS
<222> (1)..(1047)
<223>

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<220>
<221> misc_feature
<223> Subspecies: pertenue (CDC-2 strain)
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<400> 21
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 Met Phe Val Arg Ser Asp Met Phe Pro Lys Asn Thr Ala Val Glu Ile
 1 5 10 15

 agc aac tta gaa aag aat gcc aag gct cag gca gtg gtt att ggg cac 96
 Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His
 20 25 30

 gca ggg atc ccc ggt ctt cta gtt agc ctt gca ccc gct gct gca gca 144
 Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala
 35 40 45

 cag ctt ggg att ggc gta tac caa gct gtg cgt gta cgc gta cgt acc 192
 Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr
 50 55 60

 ttg ggt acc gtg cgc ggt ggg tct caa aca agt cag gac gga ctg tcc 240
 Leu Gly Thr Val Arg Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser
 65 70 75 80

 ctt gca tct ttg ccg tcc cgt gtg cct gcg cgc ccc gcg cag cgt gat 288
 Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp
 85 90 95

 cct ctg tca tcc ccg ccg gca ggt cac act gta ccg gaa tat cgc gat 336
 Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp
 100 105 110

 acg gtt att ttc gat gac ccg cgt ttg gtt tcc cct ttg tct cgt gag 384
 Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu
 115 120 125

 gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga 432
 Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly
 130 135 140

 ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct 480
 Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser
 145 150 155 160

 gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg 528
 Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val
 165 170 175

 gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg 576
 Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val
 180 185 190

 ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag 624
 Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu

195	200	205	
gtc gct tct cag cat acg aag cag cca tcc cac tcg gtt tcc aac tca Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser 210 215 220			672
gct ccc aat cag ttt cgg aac cct gag ggg gaa ctc ccc ttt acg ctc Ala Pro Asn Gln Phe Arg Asn Pro Glu Gly Glu Leu Pro Phe Thr Leu 225 230 235 240			720
cct gac cta tcc gag tca gaa att gtg gtt ccg gag gaa cag aaa gga Pro Asp Leu Ser Glu Ser Glu Ile Val Val Pro Glu Glu Gln Lys Gly 245 250 255			768
cgt gcg cat ccc cag gtg ata ccc gag ggt gcg cca cgt gga ctg caa Arg Ala His Pro Gln Val Ile Pro Glu Gly Ala Pro Arg Gly Leu Gln 260 265 270			816
cct ggt gaa tac tac gta cag att gca gtc ttt cat gac gct atc cag Pro Gly Glu Tyr Tyr Val Gln Ile Ala Val Phe His Asp Ala Ile Gln 275 280 285			864
gtg cag agc att gtc cac cgt tac ggg gta gaa tac ccc atc gca gtg Val Gln Ser Ile Val His Arg Tyr Gly Val Glu Tyr Pro Ile Ala Val 290 295 300			912
gag cag gac atc cat gaa ggt aag gtg cgt ttc acc gta tgc gtc ggt Glu Gln Asp Ile His Glu Gly Lys Val Arg Phe Thr Val Cys Val Gly 305 310 315 320			960
cct gtc caa aaa gac gaa cgc ggc gcg gta cta gag aac ttc caa agg Pro Val Gln Lys Asp Glu Arg Gly Ala Val Leu Glu Asn Phe Gln Arg 325 330 335			1008
ttt gga ttc aag gac gcc ttt ctg aaa aag gcg cga tga Phe Gly Phe Lys Asp Ala Phe Leu Lys Lys Ala Arg 340 345			1047

<210> 22
 <211> 348
 <212> PRT
 <213> *Treponema pallidum*

<220>
 <221> misc_feature
 <223> Subspecies: pertenue (CDC-2 strain)
 <400> 22

Met Phe Val Arg Ser Asp Met Phe Pro Lys Asn Thr Ala Val Glu Ile
 1 5 10 15

Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His
 20 25 30

Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala
 35 40 45

Gln	Leu	Gly	Ile	Gly	Val	Tyr	Gln	Ala	Val	Arg	Val	Arg	Val	Arg	Thr
50					55					60					
Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser															
65				70			75			80					
Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp															
85					90			95							
Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp															
100				105			110								
Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu															
115				120			125								
Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly															
130				135			140								
Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser															
145				150			155			160					
Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val															
165				170			175								
Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val															
180				185			190								
Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu															
195				200			205								
Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser															
210				215			220								
Ala Pro Asn Gln Phe Arg Asn Pro Glu Gly Glu Leu Pro Phe Thr Leu															
225				230			235			240					
Pro Asp Leu Ser Glu Ser Glu Ile Val Val Pro Glu Glu Gln Lys Gly															
245				250			255								
Arg Ala His Pro Gln Val Ile Pro Glu Gly Ala Pro Arg Gly Leu Gln															
260				265			270								
Pro Gly Glu Tyr Tyr Val Gln Ile Ala Val Phe His Asp Ala Ile Gln															
275				280			285								

Val Gln Ser Ile Val His Arg Tyr Gly Val Glu Tyr Pro Ile Ala Val
290 295 300

Glu Gln Asp Ile His Glu Gly Lys Val Arg Phe Thr Val Cys Val Gly
305 310 315 320

Pro Val Gln Lys Asp Glu Arg Gly Ala Val Leu Glu Asn Phe Gln Arg
325 330 335

Phe Gly Phe Lys Asp Ala Phe Leu Lys Lys Ala Arg
340 345

<210> 23
<211> 1287
<212> DNA
<213> *Treponema pallidum*

<220>
<221> CDS
<222> (1)...(1287)
<223>

<220>
<221> misc_feature
<223> Subspecies: *endemicum* (Bosnia strain)

<400> 23
atg ttt gtg cgc agt gac atg ttc ccc aaa aac act gct gtt gaa att 48
Met Phe Val Arg Ser Asp Met Phe Pro Lys Asn Thr Ala Val Glu Ile
1 5 10 15

agc aac tta gaa aag aat gcc aag gct cag gca gtg gtt att ggg cac 96
Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His
20 25 30

gca ggg atc ccc ggt ctt cta gtt agc ctt gca ccc gct gct gca gca 144
Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala
35 40 45

cag ctt ggg att ggc gta tac caa gct gtg cgt gta cgc gta cgt acc 192
Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr
50 55 60

ttg ggt acc gtc cgc ggt ggg tct caa aca agt cag gac gga ctg tcc 240
Leu Gly Thr Val Arg Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser
65 70 75 80

ctt gca tct ttg ccg tcc cgt gtg cct gcg cgc ccc gcg cag cgt gat 288
Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp
85 90 95

cct ctg tca tcc ccg ccg gca ggt cac act gta ccg gaa tat cgc gat 336
Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp
100 105 110

acg gtt att ttc gat gac ccg cgt ttg gtt tcc cct ttg tct cgt gag	384
Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu	
115 120 125	
gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga	432
Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly	
130 135 140	
ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct	480
Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser	
145 150 155 160	
gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg	528
Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val	
165 170 175	
gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg	576
Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val	
180 185 190	
ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag	624
Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu	
195 200 205	
gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga	672
Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly	
210 215 220	
ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct	720
Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser	
225 230 235 240	
gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg	768
Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val	
245 250 255	
gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg	816
Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val	
260 265 270	
ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag	864
Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu	
275 280 285	
gtc gct tct cag cat acg aag cag cca tcc cac tcg gtt tcc aac tca	912
Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser	
290 295 300	
gct ccc aat cag ttt cgg aac cct gag ggg gaa ctc ccc ttt acg ctc	960
Ala Pro Asn Gln Phe Arg Asn Pro Glu Gly Glu Leu Pro Phe Thr Leu	
305 310 315 320	
cct gac cta tcc gag tca gaa att gtg gtt ccg gag gaa cag aaa gga	1008
Pro Asp Leu Ser Glu Ser Glu Ile Val Val Pro Glu Glu Gln Lys Gly	
325 330 335	
cgt gcg cat ccc cag gtg ata ccc gag ggt gcg cca cgt gga ctg caa	1056
Arg Ala His Pro Gln Val Ile Pro Glu Gly Ala Pro Arg Gly Leu Gln	
340 345 350	
cct ggt gaa tac tac gta cag att gca gtc ttt cat gac gct atc cag	1104

Pro	Gly	Glu	Tyr	Tyr	Val	Gln	Ile	Ala	Val	Phe	His	Asp	Ala	Ile	Gln	
355					360						365					
gtg	cag	agc	att	gtc	cac	cgt	tac	ggg	gta	gaa	tac	ccc	atc	gca	gtg	1152
Val	Gln	Ser	Ile	Val	His	Arg	Tyr	Gly	Val	Glu	Tyr	Pro	Ile	Ala	Val	
370				375					380							
gag	cag	gac	atc	cat	gaa	ggt	aag	gtg	cgt	ttc	acc	gta	tgc	gtc	ggt	1200
Glu	Gln	Asp	Ile	His	Glu	Gly	Lys	Val	Arg	Phe	Thr	Val	Cys	Val	Gly	
385				390					395			400				
cct	gtc	caa	aaa	gac	gaa	cgc	ggc	gcg	gta	cta	gag	aac	ttc	caa	agg	1248
Pro	Val	Gln	Lys	Asp	Glu	Arg	Gly	Ala	Val	Leu	Glu	Asn	Phe	Gln	Arg	
405					410							415				
ttt	gga	ttc	aag	gac	gcc	ttt	ctg	aaa	aag	gcg	cga	tga				1287
Phe	Gly	Phe	Lys	Asp	Ala	Phe	Leu	Lys	Lys	Ala	Arg					
420					425											
<210> 24																
<211> 428																
<212> PRT																
<213> Treponema pallidum																
<220>																
<221> misc_feature																
<223> Subspecies: endemicum (Bosnia strain)																
<400> 24																
Met	Phe	Val	Arg	Ser	Asp	Met	Phe	Pro	Lys	Asn	Thr	Ala	Val	Glu	Ile	
1					5				10				15			
Ser	Asn	Leu	Glu	Lys	Asn	Ala	Lys	Ala	Gln	Ala	Val	Val	Ile	Gly	His	
					20				25				30			
Ala	Gly	Ile	Pro	Gly	Leu	Leu	Val	Ser	Leu	Ala	Pro	Ala	Ala	Ala	Ala	
					35				40				45			
Gln	Leu	Gly	Ile	Gly	Val	Tyr	Gln	Ala	Val	Arg	Val	Arg	Val	Arg	Thr	
					50				55				60			
Leu	Gly	Thr	Val	Arg	Gly	Gly	Ser	Gln	Thr	Ser	Gln	Asp	Gly	Leu	Ser	
					65				70				75			80
Leu	Ala	Ser	Leu	Pro	Ser	Arg	Val	Pro	Ala	Arg	Pro	Ala	Gln	Arg	Asp	
					85				90				95			
Pro	Leu	Ser	Ser	Pro	Pro	Ala	Gly	His	Thr	Val	Pro	Glu	Tyr	Arg	Asp	
					100				105				110			
Thr	Val	Ile	Phe	Asp	Asp	Pro	Arg	Leu	Val	Ser	Pro	Leu	Ser	Arg	Glu	
					115				120				125			

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly
 130 135 140

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser
 145 150 155 160

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val
 165 170 175

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val
 180 185 190

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu
 195 200 205

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly
 210 215 220

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser
 225 230 235 240

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val
 245 250 255

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val
 260 265 270

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu
 275 280 285

Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser
 290 295 300

Ala Pro Asn Gln Phe Arg Asn Pro Glu Gly Glu Leu Pro Phe Thr Leu
 305 310 315 320

Pro Asp Leu Ser Glu Ser Glu Ile Val Val Pro Glu Glu Gln Lys Gly
 325 330 335

Arg Ala His Pro Gln Val Ile Pro Glu Gly Ala Pro Arg Gly Leu Gln
 340 345 350

Pro Gly Glu Tyr Tyr Val Gln Ile Ala Val Phe His Asp Ala Ile Gln
 355 360 365

Val Gln Ser Ile Val His Arg Tyr Gly Val Glu Tyr Pro Ile Ala Val
 370 375 380

Glu Gln Asp Ile His Glu Gly Lys Val Arg Phe Thr Val Cys Val Gly
 385 390 395 400

Pro Val Gln Lys Asp Glu Arg Gly Ala Val Leu Glu Asn Phe Gln Arg
 405 410 415

Phe Gly Phe Lys Asp Ala Phe Leu Lys Ala Arg
 420 425

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 <211> 1182
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 <213> Treponema pallidum

<220>
 <221> CDS
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 <223> Subspecies: pertenue (CDC-1 strain)

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agc aac tta gaa aag aat gcc aag gct cag gca gtg gtt att ggg cac 96
 Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His
 20 25 30

gca ggg atc ccc ggt ctt cta gtt agc ctt gca ccc gct gct gca gca 144
 Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala
 35 40 45

cag ctt ggg att ggc gta tac caa gct gtg cgt gta cgc gta cgt acc 192
 Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr
 50 55 60

ttg ggt acc gtg cgc ggt ggg tct caa aca agt cag gac gga ctg tcc 240
 Leu Gly Thr Val Arg Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser
 65 70 75 80

ctt gca tct ttg ccg tcc cgt gtg cct gcg cgc ccc gcg cag cgt gat 288
 Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp
 85 90 95

cct ctg tca tcc ccg ccg gca ggt cac act gta ccg gaa tat cgc gat 336
 Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp
 100 105 110

acg gtt att ttc gat gac ccg cgt ttg gtt tcc cct ttg tct cgt gag	384
Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu	
115 120 125	
gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc	432
Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala	
130 135 140	
tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta	480
Ser Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val	
145 150 155 160	
gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac	528
Val Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu Val Glu Asp	
165 170 175	
gtg ccg aag gta gtg gag ccg tct gag cgt gag gga ggg gag cgt	576
Val Pro Lys Val Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg	
180 185 190	
gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag	624
Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu	
195 200 205	
gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc	672
Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala	
210 215 220	
tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta	720
Ser Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val	
225 230 235 240	
gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtc gct tct	768
Val Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu Val Ala Ser	
245 250 255	
cag cat acg aag cag cca tcc cac tcg gtt tcc aac tca gct ccc aat	816
Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser Ala Pro Asn	
260 265 270	
cag ttt cgg aac cct gag ggg gaa ctc ccc ttt acg ctc cct gac cta	864
Gln Phe Arg Asn Pro Glu Gly Glu Leu Pro Phe Thr Leu Pro Asp Leu	
275 280 285	
tcc gag tca gaa att gtg gtt ccg gag gaa cag aaa gga cgt gcg cat	912
Ser Glu Ser Glu Ile Val Val Pro Glu Glu Gln Lys Gly Arg Ala His	
290 295 300	
ccc cag gtg ata ccc gag ggt gcg cca cgt gga ctg caa cct ggt gaa	960
Pro Gln Val Ile Pro Glu Gly Ala Pro Arg Gly Leu Gln Pro Gly Glu	
305 310 315 320	
tac tac gta cag att gca gtc ttt cat gac gct atc cag gtg cag agc	1008
Tyr Tyr Val Gln Ile Ala Val Phe His Asp Ala Ile Gln Val Gln Ser	
325 330 335	
att gtc cac cgt tac ggg gta gaa tac ccc atc gca gtg gag cag gac	1056
Ile Val His Arg Tyr Gly Val Glu Tyr Pro Ile Ala Val Glu Gln Asp	
340 345 350	

atc cat gaa ggt aag gtg cgt ttc acc gta tgc gtc ggt cct gtc caa 1104
 Ile His Glu Gly Lys Val Arg Phe Thr Val Cys Val Gly Pro Val Gln
 355 360 365

aaa gac gaa cgc ggc gcg gta cta gag aac ttc caa agg ttt gga ttc 1152
 Lys Asp Glu Arg Gly Ala Val Leu Glu Asn Phe Gln Arg Phe Gly Phe
 370 375 380

aag gac gcc ttt ctg aaa aag gcg cga tga 1182
 Lys Asp Ala Phe Leu Lys Lys Ala Arg
 385 390

<210> 26
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 <212> PRT
 <213> Treponema pallidum

<220>
 <221> misc_feature
 <223> Subspecies: pertenue (CDC-1 strain)

<400> 26

Met Phe Val Arg Ser Asp Met Phe Pro Lys Asn Thr Ala Val Glu Ile
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Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His
 20 25 30

Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala
 35 40 45

Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr
 50 55 60

Leu Gly Thr Val Arg Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser
 65 70 75 80

Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp
 85 90 95

Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp
 100 105 110

Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu
 115 120 125

Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala
 130 135 140

Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val

145

150

155

160

Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp
 165 170 175

Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg
 180 185 190

Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu
 195 200 205

Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala
 210 215 220

Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val
 225 230 235 240

Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Ala Ser
 245 250 255

Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser Ala Pro Asn
 260 265 270

Gln Phe Arg Asn Pro Glu Gly Glu Leu Pro Phe Thr Leu Pro Asp Leu
 275 280 285

Ser Glu Ser Glu Ile Val Val Pro Glu Glu Gln Lys Gly Arg Ala His
 290 295 300

Pro Gln Val Ile Pro Glu Gly Ala Pro Arg Gly Leu Gln Pro Gly Glu
 305 310 315 320

Tyr Tyr Val Gln Ile Ala Val Phe His Asp Ala Ile Gln Val Gln Ser
 325 330 335

Ile Val His Arg Tyr Gly Val Glu Tyr Pro Ile Ala Val Glu Gln Asp
 340 345 350

Ile His Glu Gly Lys Val Arg Phe Thr Val Cys Val Gly Pro Val Gln
 355 360 365

Lys Asp Glu Arg Gly Ala Val Leu Glu Asn Phe Gln Arg Phe Gly Phe
 370 375 380

Lys Asp Ala Phe Leu Lys Lys Ala Arg
 385 390